

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-8. (Canceled)

9. (Currently amended) A piezoelectric actuator, comprising

a multi-layered construction of piezoelectric layers (2) interleaved with inner electrodes (3, 4; 14, 15), and

an alternating contacting of the inner electrodes (3, 4; 14, 15) with outer electrodes (5, 6; 11), the regions between the outer electrodes (5, 6; 11) being provided with an insulation layer (12, 13), comprised of the same ceramic material as the piezoelectric layers (2), and thus having the same properties as the piezoelectric layers (2) themselves, and a material with properties virtually identical to those of the piezoelectric layers (2), the insulating layer (12, 13) being applied to the outer surface of the piezoelectric actuator (1; 10) in the green state of the piezoelectric actuator (1, 10), before sintering, in the region between the outer electrodes (5, 6; 11).

10. (Previously presented) The piezoelectric actuator according to claim 9, wherein the insulating layer (12, 13) encloses the edges of the piezoelectric actuator (1; 10).

Claims 11-12. **(Canceled)**

13. **(Previously presented)** The piezoelectric actuator according to claim 9, wherein the outer electrodes (5, 6; 11) are attached to regions of the insulating material that have been uncovered by grinding.

14. **(Previously presented)** The piezoelectric actuator according to claim 10, wherein the outer electrodes (5, 6; 11) are attached to regions of the insulating material that have been uncovered by grinding.

Claims 15-16. **(Canceled)**

17. **(Previously presented)** A method for manufacturing a piezoelectric actuator according to claim 9, the method comprising the steps of

applying the insulating layer (12, 13) to all of the external surfaces of the piezoelectric actuator (10) in the green state of the piezoelectric actuator,

sintering the piezoelectric actuator (10), and

uncovering the regions (16, 17) in which the outer electrodes (5, 6; 11) are contacted, after sintering the piezoelectric actuator.

18. (Previously presented) A method for manufacturing a piezoelectric actuator according to claim 10, the method comprising the steps of

applying the insulating layer (12, 13) to all of the external surfaces of the piezoelectric actuator (10) in the green state of the piezoelectric actuator,

sintering the piezoelectric actuator (10), and

uncovering the regions (16, 17) in which the outer electrodes (5, 6; 11) are contacted, after sintering the piezoelectric actuator.

19. (Previously presented) A method for manufacturing a piezoelectric actuator according to claim 11, the method comprising the steps of

applying the insulating layer (12, 13) to all of the external surfaces of the piezoelectric actuator (10) in the green state of the piezoelectric actuator,

sintering the piezoelectric actuator (10), and

uncovering the regions (16, 17) in which the outer electrodes (5, 6; 11) are contacted, after sintering the piezoelectric actuator.

20. (Previously presented) A method for manufacturing a piezoelectric actuator according to claim 13, the method comprising the steps of

applying the insulating layer (12, 13) to all of the external surfaces of the piezoelectric actuator (10) in the green state of the piezoelectric actuator,

sintering the piezoelectric actuator (10), and

uncovering the regions (16, 17) in which the outer electrodes (5, 6; 11) are contacted, after sintering the piezoelectric actuator.

21. **(Previously presented)** The method according to claim 17, wherein the step of applying the insulating layer comprises dipping the piezoelectric actuator (10) into the still fluid insulating layer, or wetting the piezoelectric actuator (10) with the fluid insulating material either on all sides or on two sides.

22. **(Previously presented)** The method according to claim 18, wherein the step of applying the insulating layer comprises dipping the piezoelectric actuator (10) into the still fluid insulating layer, or wetting the piezoelectric actuator (10) with the fluid insulating material either on all sides or on two sides.

23. **(Previously presented)** The method according to claim 19, wherein the step of applying the insulating layer comprises dipping the piezoelectric actuator (10) into the still fluid insulating layer, or wetting the piezoelectric actuator (10) with the fluid insulating material either on all sides or on two sides.

24. **(Previously presented)** The method according to claim 20, wherein the step of applying the insulating layer comprises dipping the piezoelectric actuator (10) into the still fluid insulating layer, or wetting the piezoelectric actuator (10) with the fluid insulating material either on all sides or on two sides.

25. **(Previously presented)** The method according to claim 17, wherein the regions (16, 17) that are contacted by the outer electrodes (5, 6; 11) are uncovered by means of grinding.

26. **(Previously presented)** The method according to claim 21, wherein the regions (16, 17) that are contacted by the outer electrodes (5, 6; 11) are uncovered by means of grinding.

27. **(Previously presented)** The method according to claim 17, wherein the regions (16, 17) that are contacted by the outer electrodes (5, 6; 11) are uncovered by means of etching.

28. **(Previously presented)** The method according to claim 21, wherein the regions (16, 17) that are contacted by the outer electrodes (5, 6; 11) are uncovered by means of etching.

29. **(New)** An apparatus made by the following steps,
providing a piezoelectric stack having alternating layers of piezoelectric material and inner electrodes, and
prior to any sintering of the stack, coating the outside of the piezoelectric stack with a layer of material which is the same material as the piezoelectric layers.

30. (New) An apparatus as recited in claim 29, wherein the steps also include,

after the piezoelectric stack is coated with the same material as is used as the piezoelectric material, sintering the apparatus so that the material used as the coating becomes hard, smooth and impervious, and forms an insulation layer for the piezoelectric stack.

31. (New) An apparatus as recited in claim 30, wherein the steps also include,

after the piezoelectric stack is sintered and the coating layer is hardened, removing portions of the sintered coating.

32. (New) An apparatus as recited in claim 31, wherein the steps also include,

after portions of the sintered coating have been removed, adding outer electrodes to the area which has had the coating removed in a manner such that the outer electrodes make appropriate contact with the inner electrodes.